

### **ABSTRACT OF THE DISCLOSURE**

An LED ultraviolet photocatalytic oxidation device is provided in a fluid handling system, such as an air handling system. In one embodiment, the photocatalyst is disposed on a protective layer (e.g. glass, plastic or quartz) on the semiconductor of the LED. In another embodiment, the photocatalyst is disposed on the protective layer, which is separated from the semiconductor by a fluid that filters or changes the wavelengths emitted by the LED. In a third embodiment, the photocatalyst is disposed directly on the semiconductor of the LED.

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